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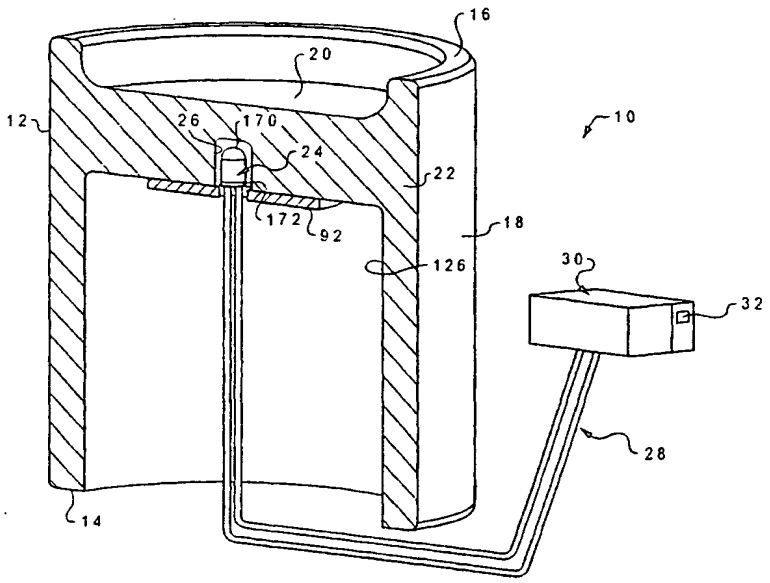
(54) Title: IMITATION CANDLE



(57) Abstract: An imitation candle (10) is made from a translucent material (22) having light transmissive properties similar to paraffin. The translucent material (22) is shaped to appear reduced by burning. An LED (24), or similar high intensity light source, is set in a cavity (26) enclosed within translucent material (22). An amber colored LED (24) produces a light similar in color to candle light. The material (22) diffuses the light emitted from the LED (24) to create a warm, natural looking glow. A randomizing energization circuit (46) varies light emission levels from the LED (24) in a pseudo-random manner to simulate the flicker of candle light.

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Declarations under Rule 4.17:

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)*

— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations*

— *of inventorship (Rule 4.17(iv)) for US only*

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Claims

1. An ornamental luminaire (10) characterized by:
a light diffusing body (12) shaped by a central depression (20) in an upper surface (16) to appear reduced by burning;
a cavity (26) within the light diffusing body (12) located substantially nearer the central depression (20) than to a lower surface (14) of the light diffusing body (12);
a directional light source (24) having a light emitting surface (170) located in the cavity (26); and
the cavity (26) substantially conforming in shape and size to the light emitting surface (170).

2. An ornamental luminaire (10) as claimed in claim 1, further characterized by:
an opaque barrier (90) positioned around the base of the directional light source (24).

3. An ornamental luminaire (10) as claimed in claim 1 or 2, wherein the lower surface (14) is sized and shaped to make the light diffusing body self supporting.

4. An ornamental luminaire as claimed in claims 1, 2, or 3 wherein the high intensity light source (24) is a super bright light emitting diode having a predominant emission color of amber.

5. An ornamental luminaire (10) as claimed in claims 1, 2, 3, or 4 further characterized by:
an energization circuit (46) connected to the high intensity light source (24) having a plurality of oscillators (64, 66, 68 and 70) contributing varying portions of an energization current to the high intensity light source (24);
a power source (50);
the plurality of oscillators (64, 66, 68 and 70) connectable to the power source (50), each oscillator being tuned to oscillate at a different frequency; and
a summing junction combining the outputs of the plurality of oscillators to produce a pseudo-random variation in the energization current.

6. An ornamental luminaire (10) apparatus as claimed in Claim 1, 2, 3, 4, or 5 wherein the light diffusing body is made of candle wax.

7. An ornamental luminaire (10) as claimed in Claim 1, 2, 3, 4, 5, or 6 further characterized by a second cavity (38) and a power source provided by a replaceable battery (50) positioned in the second cavity (38).

8. An ornamental luminaire (10) as claimed in Claim 1, 2, 3, 4, 5, or 6 wherein the power source (30) is a wall socket compatible power supply.

9. An imitation candle (10) comprising:

an optically translucent body (12) shaped and sized to resemble a candle reduced by burning with a vertical side (18) and a depressed central region (20) in an upper surface (16);

a directional light source (24) disposed horizontally centered within the optically translucent body (12) in a cavity (26) sized and shaped to admit the directional light source and to capture light emitted therefrom for diffusion through the optically translucent body (12);

a power supply (30); and

a flicker energization signal generator (46) connected between the power supply (30) and the directional light source (24) for delivering a varying energization signal to the directional light source (24).

10. An imitation candle (10) as claimed in Claim 9, further characterized by:

the directional light source (24) being a super bright light emitting diode (124);

a light channeling cavity (92) extending horizontally from the directional light source (24);

an opaque liner (92) forming an extended base surrounding the directional light source (24);

the flicker energization signal generator (46) having a plurality oscillators (64, 66, 68, 70) tuned to close frequencies and to drift with respect to one another to produce component signals for a pseudo-random flicker energization signal; and

a summer combining the components of the pseudo-random flicker energization signal and connected to apply the pseudo-random flicker energization signal to the super bright light emitting diode.